

THE RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF FISH AND GAME  
MARINE RESOURCES OPERATIONS

REPORT FOR THE MONTH OF MAY 1962

ACCOMPLISHMENTS

We have been successful in bringing first and second post-larval stages of crabs up from the ocean bottom. These small crabs, about one-quarter of an inch across, are important in our studies of the future of the crab resource. This work is carried on aboard the M/V NAUTILUS.

HIGHLIGHTS

The N.B. SCOFIELD caught the first albacore of the 1962 season Sunday, May 27, 255 miles southwest of Guadalupe Island. The fish was 60 centimeters long, weighed approximately nine pounds, and was taken in 64° F. water. The vessel departed from San Pedro on May 17, for a 30-day exploratory cruise.

During the cruise of the M/V ALASKA for shrimp studies the several shrimp beds off the California coast were explored to determine their relative size and composition by year class groups. One-year-old shrimp appeared dominant.

Bottomfish and abalone landings were down because of bad weather and, in the case of flatfish, a short price dispute. The crab fishery continued on a dismal note, with San Francisco landings the worst on record and those from the north coast the lowest since 1944-45.

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## 1. BOTTOMFISH

- A. Flatfish: Storms during the early part of May, coupled with a short shut-down (April 30 to May 3) to negotiate new prices resulted in generally small landings. Fishermen were able to secure a 1/4 cent per pound raise on Dover sole. A requested increase of 1/2 cent per pound for animal food was turned down. Consequently, there have been no landings at Eureka or Fort Bragg. The request was prompted by the demand of dealers that sablefish and hake be sorted out of animal food landings.

Good Dover sole landings were reported at Eureka when the fleet was able to get to sea during the latter part of the month.

Santa Barbara continues to grow as a trawling port. There are now eleven vessels based there. Landings have not been large as yet but the boats have been engaged chiefly in exploring. We can look forward to increased fishing effort in the areas south of Santa Barbara.

Monterey reports increased landings of gillnet-caught California halibut.

The first draft of a manuscript on Dover sole catch localities was prepared.

- B. Rockfish: Fishing for rockfish was generally poor throughout the state during May. The lack of success can be blamed on weather and inability of the fleet in central and southern areas to find concentrations of fish. Little effort was directed towards rockfish in the northern areas.
- C. Hake: A special sample of 100 hake was obtained at the request of the U.S. Fish and Wildlife Service. Measurements of the weight of the heads and viscera in relation to total weight of the fish were obtained. These data are to be used in arguments for use of whole fish in manufacture of fish protein concentrate.

## 2. SHELLFISH

- A. Abalone: Final corrections and editing were made on the abalone bulletin and it was submitted to the printer on May 22.

Dr. D.B. Quayle, Invertebrate Zoologist, Nanaimo Research Laboratory, British Columbia, visited the Menlo Park Laboratory to discuss abalone. He is investigating the possibilities of an abalone fishery in British Columbia. R. Owens, commercial diver, also visited the laboratory to discuss hybrid abalone and arrangements were made to take Dr. Quayle out on an abalone boat at Morro Bay.

Abalone continue to be in prime condition in the Morro Bay area although bad weather has continued to limit diving.

- B. Crab: Landings for the San Francisco region totaled 659,113 pounds to April 1, the lowest on record. Eureka, Crescent City and Fort Bragg catches reached 3,056,525 pounds on April 1, the lowest since the 1944-45 season when 1.3 million pounds was landed.

Work continued on the growth study of the market crab aboard the NAUTILUS. Crabs of the 1st and 2nd post-larval stages were taken on the regular monthly cruise along with the 16-month-old crabs that have been followed since June 1961. Lack of large crabs has hindered study of the later instar stages.

Carapaces were collected at Bodega Bay to correlate with growth data obtained by the beam trawl.

- C. Oysters and Clams: Oyster harvesting operations have declined slightly with the onset of warmer weather. The 26-month-old oysters at Tomales Bay are large and in good condition but appear to be accumulating sex products. Survival and growth of the 1961 Tomales Bay crop appears very good.

The Drakes Bay harvest is principally from the 1960 planting now 26 months old.

Initial survival counts are nearly complete for the 1962 Pacific oyster seed from Miyagi Prefecture and Tokyo Bay and also for Kumamoto seed oysters. These oysters are being used in hanging and tray culture experiments at the Port of Redwood City and in hanging and ground cultch experiments at Tomales Bay. Survival and growth in both areas are very good.

- D. Shrimp: The beds in all areas were surveyed during the ALASKA cruise this month. In Area B-2 shrimp were located in commercial quantity off Ft. Ross in 50 to 56 fathoms of water. The best tow produced 740 pounds of shrimp in 20 minutes.

In Area B-1 a small school was located off Usal in 60 to 70 fathoms of water. The outlook here for a successful commercial season is not good.

In Area A shrimp were located off Redding Rock in 48 to 72 fathoms of water. The school covered an area approximately 5 miles long and 5 miles wide. The best tow here produced shrimp at the rate of 600 pounds in twenty minutes. In all areas one-year-old shrimp appeared plentiful and were the dominant year class. Samples of shrimp from each tow were sexed, measured and weighed. The ALASKA continued the survey in Area C (off Pt. Sal) on its return trip to San Pedro but results are not yet known.

The commercial season starts on June 1, but 6 to 8 Brookings, Oregon, vessels fished in Area A during May when weather permitted. Eureka Lab personnel obtained samples at Brookings during the month.

### 3. PELAGIC FISH

- A. Sardines: San Pedro fresh fish market landings were 124 tons. These landings tend to be high at this time of year because of the demand for frozen sportfishing bait. The cannery putting up special pack sardines stopped this operation after the first part of the month. Three samples were taken: all were large fish with the females containing well-developed eggs. Several hundred pounds of large sardines were delivered to fish markets in Monterey. The state of maturity of the sardines together with a warming of ocean waters, would indicate possible spawning in this region shortly..

- B. Mackerel: San Pedro fresh fish market landings were 65 tons through May 22 for each of the mackerel species. Cannery landings for the state were about 1,500 tons for jacks and 2,500 tons for Pacifics. About 1,400 tons of Pacifics were landed on the 28th and 29th in southern California. Three more canneries started taking mackerel, which raised the number of active canneries to five. Monterey cannery landings were 130 tons of jack mackerel by May 21.
- C. Anchovies: Anchovy landings at the San Pedro fresh fish markets were 11 tons through May 22. The application of four Monterey and San Francisco canners to each reduce 2,500 tons of anchovies was denied by the Fish and Game Commission at a meeting in Los Angeles on May 25.
- D. Live Bait: Bait was usually plentiful in Los Angeles Harbor with mostly medium sized anchovies taken. This year's colder water has coincided with the lack of "pinheads" that were dominant during the last three to four years when waters were warmer.

There are two boats catching live bait in the San Francisco area. Reports are that live bait is effective in catching sport fish there. The live bait boat operator in Hueneme reported that there are salmon below Santa Barbara and that about 15 commercial boats are making good catches.

- E. Squid: Cannery landings of squid at Monterey were 240 tons. Squid fishermen made an unexpected catch of five great white sharks. The largest one was 13.5 feet long and had the remains of two seals in its stomach.
- F. Aerial Survey: Three hundred and forty-four schools of anchovies were counted in the inshore area between the U.S.-Mexican Border and Half Moon Bay. Forty-six of these were in the San Diego area and 38 were in the upper end of Monterey Bay. The rest (260) were between Malibu and Goleta Pt.
- G. Sea Survey: Detailed adjustments to the sea survey data for past years were completed, opening the way for comprehensive analysis. A start was made on programing the IBM 7090 computer at the Western Data Processing Center to do the preliminary steps in this analysis.

Other phases of project activity included analysis of egg and larva data for use in the hearings on anchovy reduction permits, morphometric studies on sardines taken in the Gulf of California in March, and planning for the 1962 sea survey cruises.

#### 4. TUNA

- A. Albacore: The N.B. SCOFIELD caught the first albacore of the 1962 season Sunday, May 27, 255 miles southwest of Guadalupe Island. The fish was 60 centimeters long, weighed approximately nine pounds, and was taken in 64° F. water. The vessel departed from San Pedro on May 17, for a 30-day exploratory cruise.

Over 500 "Albacore Newsletters" were sent to interested fishermen.

Work is progressing at a satisfactory rate on the contract with the U.S. Bureau of Commercial Fisheries.

- B. Bluefin: Sixty-three tons of bluefin tuna taken during the last week in April and the first week in May, at the south end of Guadalupe Island, were landed at San Pedro May 8. The schools were of mixed sizes ranging approximately 10 to 80 pounds.

## 5. SPORTFISH

- A. Partyboat: The catches of rockfish, bonito, kelp, sand bass and salmon on partyboats were smaller through April 1962 than for the same period in 1961. Bonito were about 20 percent and of kelp and sand bass 9 percent lower. Two species, barracuda and California halibut had been taken in greater numbers (about 10 and 80 percent respectively) than in 1961.

The comparative catch of the six key species is as follows:

<u>Through April</u>	<u>1962</u>	<u>1961</u>
Rockfish	211,338	214,129
Bonito	74,052	90,154
Kelp and Sand Bass	46,783	51,194
Barracuda	46,245	41,468
California Halibut	24,009	13,533
Salmon	15,558	16,093

Age rings on wafered sections of a series of California halibut otolith pairs were compared.

- B. Barracuda and White Seabass Management Study (DJ F16R5): Schools of barracuda at the Horseshoe Kelp and Huntington Flats have stimulated the sport and commercial fishery. Party boats and skiffs reported limit catches during the first half of the month. Commercial boats averaged 1,131 pounds per trip.

The white seabass commercial fishery is still at a low ebb. These fishermen have averaged 50 pounds per trip. The sport fishery is still sporadic.

Clark's 1930 white seabass data on the weight-length relationship has been recalculated by the Biometrical Analysis Section on the IBM 7090. The purpose of this additional analysis is to make Clark's data and statistical methods directly comparable with our computations.

Aging of barracuda scales has continued throughout the month. Approximately 1,100 scales have been read to date.

The second championship meet of the Greater Los Angeles Council of Skin-divers was attended by project personnel. The purpose of this work is to establish a practical method for sampling this type of sport fishery.

Seasonal aids have been interviewed and selected for the forthcoming sport survey project of southern California. In this regard, the project leader has been in discussion with the Biometrical Analysis Section to establish statistically valid techniques for sampling the various sport fisheries.

Special reports are being run by the Biostatistical Section for the Catch/Effort Study on commercially caught white seabass. These additional reports will elucidate the socio-economic factors and how they might affect catch per unit of effort.

An article for "California Fish and Game" on the marine occurrence and distinction of threadfin shad has been submitted for editing.

- C. Ocean Fish Habitat Development (DJ F17R5): Murky water prevailed along the coast during the month. Water temperatures ranged from 12.6 to 16.2 degrees C. in the diving areas.

Fish could be counted only on the Hermosa rockpile. In this area 13 sculpins, Scorpaena guttata, were tagged using Ebert's underwater tagging gun.

Turner continued work as Diving Officer, making arrangements for the seminar in June.

Work was begun on the marine life survey in the Canyon de las Encinas area. This area, south of Carlsbad, is the site of a proposed sewer outfall. The San Diego Water Pollution Control Board has contracted with the Department to conduct this survey.

- D. Blue Rockfish Management Study (DJ F19R1): The F12R Sportfish manuscript was submitted for first editing and typing at the end of the month. A few figures and photographs are yet to be completed. Final submission of the typed report is scheduled for the end of June.

The staff made a field trip from Oregon to Pt. Arguello to gather up-to-date sport fishing data for use in the manuscript and in fishing maps of the study area. They interviewed 22 Fish and Game personnel, mostly coastal wardens, plus 15 State Park rangers, several Federal people, and county and harbor district representatives.

Stomach analyses were continued on the blue rockfish. Sport catches were sampled at Santa Cruz, Monterey, Morro Bay and Avila. The fourth tagged blue rockfish was observed by a skindiver at Pt. Lobos Reserve on May 13. The others reported were here in November, 1961 and in January and February, 1962. None have been caught by anglers although about 300 had been released within a half mile of the area.

The first Cen-Cal championship competition dive was held on May 20 at Santa Cruz. All fish landed were measured by project personnel.

Gotshall participated in the first Littoral Society fish census on the West Coast held at Whaler's Cove, Pt. Lobos Reserve.

## 6. SPECIAL PROJECTS

- A. Southern California: Editing again required almost complete attention. Galleys for the July issue of CALIFORNIA FISH AND GAME were processed. Two manuscripts were edited and one (Eastern Pacific Carcharhinus) returned to the authors and one (Sea lion censuses) was submitted for publication.

Six manuscripts for CALIFORNIA FISH and GAME were submitted to the editor, only one has received attention. Editing the proposed habitat development fish bulletin was completed and the manuscript handed over to the Editor-in-Chief. The booklet "California Marine Baits" and an Outdoor California article on habitat development were reviewed and returned to Turner.

Three days, May 9, 10 and 17, were spent trawling in Santa Monica Bay as part of our fish surveillance program. Twenty-two successful hauls were made in 10 to 92 fathoms. Speckled sanddabs, yellowchin sculpins, speckle-fin midshipmen and California tonguefish contributed the bulk of the catches.

- B. Northern California: The thermograph in Drakes Estero was replaced with a new one on 2 May and the old one was repaired.

A table mount for the binocular microscope was designed and constructed. This stand is also for use as a holder for cameras when photographing small specimens in the laboratory.

Aplin spent May 21 and 22 at hearings held by the State Public Utilities Commission in San Francisco on the permit for an atomic reactor plant to be built by the Pacific Gas and Electric Company on Bodega Head. The University of California's plans for a marine station adjoining the power plant site make them vitally concerned, but the University did not object. A study of the warming effects around ten power plants in England did not show any adverse effects on the biota of the area. This substantiates observations made by our personnel at Moss Landing and Morro Bay. The University believes development of the region is inevitable and that the PG&E will be an acceptable neighbor. The Sierra Club went on record as opposing the power plant on aesthetic grounds. This hearing is the second held by the P.U.C. on this project and another one will be held in June.

The Johnson Oyster Company was assisted in a count of sample plots in their oyster beds in Drakes Estero to inventory mortality since planting the seed some 14 months ago.

Work is continuing on the littleneck clam habitat study in Tomales Bay.

- C. Seismic Operations: Mobil Oil Company conducted seismic operations off the Santa Barbara-Ventura area from May 4 to 11, 16 to 20 and 23 to 27. A total of 2,959 shots (41,760 pounds of explosives) resulted in 157 kills totaling 20,724 fish, principally northern anchovies.

Standard Oil Company conducted seismic operations of Los Angeles County from May 11 to 18 and 21 to 25. A total of 825 shots (7,110 pounds of explosives) resulted in 12 kills totaling 895 fish, chiefly white croaker, halfmoon, small widow rockfish and blacksmith.

## 7. BIOSTATISTICS

### A. Data Processing

#### Regular Reports:

March 1962 statistical reports were completed and distributed.



April 1962 cannery reports and processors reports were run. The monthly tuna letter was compiled and distributed.

Annual 1961 trawler reports were completed and transmitted to the Trawl Investigation.

Pacific Mackerel III for January, February and March were prepared and transmitted to the Pelagic Fish Investigation.

Marine Sport Catch reports for April were completed, and a letter to interested parties prepared and mailed.

Special Reports:

Tables were prepared for the Deputy Director and also for Dave Joseph covering the area from Trinidad Head to the Eel River. These figures are to be used in Water Pollution Control Board hearings.

1961 Hunter Survey Reports for Game Management Branch were transmitted to Daly Gilsenan.

San Francisco and Monterey party boat figures on number of boat days and number of anglers were transmitted to an insurance firm contemplating providing insurance for salmon party boats.

1960 albacore log reports were transmitted to the Tuna Investigation.

Tables for the California Statistical Abstract covering years through 1961 were sent to Sacramento.

An article comparing California tuna pack and landings with those of the U.S. was completed and transmitted to Sacramento.

We had several requests from the Army Engineers regarding landings at Morro Bay and a request from the Harbor Division of Morro Bay for landings during the past ten years.

Work in Progress:

April and May market receipts, May Cannery receipts and Marine Sport Catch logs are being processed.

Changing of "specific general" origins to that of general origins is being done as time permits for all of 1962 receipts. New origin maps are being prepared.

Field:

Field contacts were made with wholesale fish dealers in San Pedro, Terminal Island and Capistrano Beach to clarify fish market receipts dealing with abalone conversions, crab condition, dealer duplicates, correct species and origin.

Greenhood spent May 22 in Eureka appearing as a witness in a court case and May 23 in Sacramento discussing various biostatistical problems and budget matters.

B. Technical Assistance and Biometrical Analysis

Statistical and Mathematical Analysis:

An estimate of the number of persons purchasing Pacific ocean, 10-day and non-resident licenses during 1961 was obtained. It was found that about 118,070 persons purchased 134,936 of these licenses.

Work progressed on the development of a sampling method to estimate the number of pier anglers.

Manual Computation:

Albacore landing weights were obtained and associated with corresponding 1961 logbook records.

8. RESEARCH VESSELS

N.B. SCOFIELD

On the 3rd, the vessel returned from a month of Dover and petrale sole studies off northern California and southern Oregon (62-S-3).

On the 17th, the N.B. SCOFIELD sailed on her annual albacore exploratory cruise (62-S-4) covering the offshore area of the eastern north Pacific Ocean, between central Baja California and northern California in an attempt to intercept and determine the migratory route of albacore as they approach the coast. The vessel engaged in this activity the balance of the month.

ALASKA

On the 29th, the ALASKA returned to San Pedro from a 42 day shrimp exploratory cruise (62-A-2) covering the entire coast of California.

NAUTILUS

The NAUTILUS conducted two weeks of salmon studies in Carquinez Straits and one week of crab work off Bodega Bay.

MOLLUSK

Secured the entire month. The vessel is being readied for summer abalone work.

9. MISCELLANEOUS

A. Meetings, Talks and Visitors:

- May 2            - Dr. G. Hanna of California Academy of Sciences visited the Eureka Laboratory to discuss cruises and sampling programs of the Northern California Investigations.
- May 3            - Roedel and Clemens, as honorary members, were dinner guests of the Southern California Tuna Club, Long Beach. Clemens spoke on albacore. The 75 people present signed a "get well" card for John Radovich, also an honorary member.

- May 3 - Baxter and Turner attended the Annual South Gate Fish and Game Forum. Baxter presented a talk entitled "Our Coastal Waters." About 250 persons were present.
- May 7 - Roedel attended a meeting of the American section of the Inter-American Tropical Tuna Commission and its advisory committee. The purpose of the meeting was to consider agenda items for the annual meeting held later in May in Quito, Ecuador and to discuss the latest amendment of S2568 which in turn amends the Tuna Conventions Act of 1950.
- May 7 - Baxter met with A.R. Mogck, Mobil Oil Company to discuss seismic problems.
- May 7 - Hyatt made a trip to the San Francisco area to obtain information on the live bait fishery.
- May 7 - Baxter presented a talk on species identification to reserve wardens at CSFL.
- May 8 - Carlisle met with Chet Hart of W.C.B. to discuss Orange County's artificial reef program.
- May 9 - Roedel and Don Johnson, BCF area director, conferred on divers matters of mutual concern.
- May 9 - Turner and Ebert attended a diving medicine symposium in Glendale.
- May 9 - Carlisle appeared before the Orange County Board of Supervisors to explain artificial reef programs.
- May 10 - Roedel spent the day in Sacramento. The chief purpose of the trip was to evaluate candidates on the new AB I list and to select a man for the vacant barrabuda-white seabass position. The man we wish to pick up, already on TAU, resigned within a matter of days to accept a much higher paying job in industry.
- May 10 - Bell gave a talk on albacore research to 50 members of the Alamitos Bay Sportsman's Club.
- May 14 - Roedel met with Mr. McCracken, Shell Oil Company, to discuss seismic problems.
- May 15 - Turner and Ebert met with Leonard Burtman of the San Diego Regional Water Pollution Control Board to discuss the Canyon de las Encinas Study.
- May 15-17 - Mais spent three days in Sacramento and Crockett observing the salmon project's midwater trawling activities.
- May 16 - Roedel and Fitch participated in a "show me" trip of Los

Angeles Harbor sponsored by the L.A. Board of Harbor Commissioners. The Commission later sponsored lunch after which Roedel paid the piper with a few words on the responsibilities of the Department with special reference to pollution. Besides the Commissioners and their staff, the group of 40+ included members of the regional water pollution control board and the county public health board.

- May 17 - Roedel attended the regular monthly meetings in Sacramento.
- May 18 - Roedel spent the day at the Menlo Park Laboratory.
- May 20 - Fitch gave a talk to 35 members and guests of the Pacific Shell Club, Los Angeles.
- May 22 - Mr. James Yuan, fisheries biologist with the Republic of China, from Taipei, Taiwan, spent most of the day at CSFL.
- May 22 - Dr. D.B. Quayle, Fisheries Research Board of Canada, Nanaimo, B.C., visited the Menlo Park Laboratory to discuss shellfish culture, crab studies and abalone fishing methods.
- May 22 - Carlisle gave a talk on Habitat Development to the Inglewood Rod and Gun Club.
- May 23 - Fitch and Baxter met with A.R. Mogck, Mobil Oil Company and Fred Schultz, Humble Oil Company, to discuss seismic problems.
- May 24 - Roedel and James Stokes, Manager Region 1, spent the day aboard the ALASKA which was then finishing the ocean shrimp survey out of Crescent City. Between clear skies, a calm sea, and good fishing, it was a most enjoyable as well as illuminating trip. Roedel had paused en route the day before to confer with Orcutt at the San Francisco airport.
- May 24 - Carlisle met with Mr. Oberg of the Newport Harbor Department and Mr. Shack of the O.F.P.A. to select tentative reef sites in Orange County.
- May 24 - Mr. E. McCracken, Shell Oil Company, met with the staff at Menlo to discuss public relations matters relative to seismic explorations for oil.
- May 25 - Gates and Baxter attended the Fish and Game Commission meeting held in Los Angeles.
- May 27 - Schott gave a talk on the barred surf-perch to 70 members and guests of the Gardena Sporting Club.
- May 28 - Carlisle attended the meeting on the California Waterway Marker System of the Small Craft Harbor Commission at Arrowhead.

May 29 - Gates attended a CalCOFI meeting in La Jolla.

B. Personnel:

May 1 - Margery Baker, appointed, Intermediate Stenographer.

May 1 - Paul Campbell, appointed, Motor Vessel Engineman.

May 24 - John Wolcott, appointed Aquatic Biologist I, Seismic Observer (LT-6).

May 25 - Robert E. Bailey, resigned, Aquatic Biologist I, Seismic Observer (LT-6).



Phil M. Roedel  
Manager

PMR:md

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